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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/763,541

01/23/2004

Amnon Yariv

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7499

7590

08/19/2004

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EXAMINER

LEE, JOHN D

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 08/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/763,541

Applicant(s)

YARIV, AMNON

Examiner

John D. Lee

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9 and 12-18 is/are rejected.
- 7) ☒ Claim(s) 8, 10, 11 and 19-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

The six (6) sheets of drawing submitted on June 28, 2004, are acceptable.

The disclosure is objected to because of the following minor informality: on page 5 of the disclosure, the two lines describing **Figure 4b** are repeated three times. Appropriate correction is required. Applicant's cooperation is requested in correcting any other errors of which applicant may become aware in the specification.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

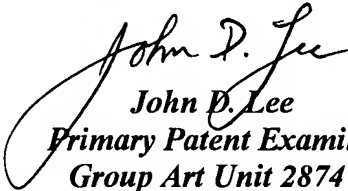
Claims 1-4, 6, 7, 9, 12-15, 17, and 18 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by U.S. Patent 6,061,381 to Adams et al. Adams et al discloses a semiconductor optical device comprising a transverse Bragg resonance waveguide comprised in turn of a cylindrical waveguiding channel surrounded by Bragg-type periodic index media (see Figure 2 and corresponding disclosure). The Adams et al device is part of a vertical cavity surface emitting laser which means that the device is included within a "laser", or an "amplifier", or an "oscillator", as claimed by applicant. This type of laser also has means for electrically providing gain through the Bragg-type periodic index media. Notice that the Bragg-type periodic index media is a periodic lattice of regions having an index of refraction distinct from that of the central waveguiding channel. Adams et al also discloses corresponding methods of fabricating and operating the semiconductor optical device.

Claims 1-5, 7, 9, 12-16, and 18 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by U.S. Patent 6,201,825 to Sakurai et al. Sakurai et al discloses a semiconductor optical device comprising a transverse Bragg resonance waveguide-type active region comprised in turn of a longitudinal waveguiding layer (channel) sandwiched on two sides by Bragg-type periodic index media. The Sakurai et al device is part of a vertical cavity surface emitting laser which means that the device is included within a "laser", or an "amplifier", or an "oscillator", as claimed by applicant. This type of laser also has means for electrically providing gain through the Bragg-type periodic index media. Notice that the Bragg-type periodic index media is a periodic lattice of regions having an index of refraction distinct from that of the central waveguiding channel. Sakurai et al also discloses corresponding methods of fabricating and operating the semiconductor optical device.

Claims 8, 10, 11, and 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Neither Adams et al nor Sakurai et al (the closest prior art of record) discloses or suggests *optically* providing gain through the Bragg-type periodic index media. Also, neither of these references discloses or suggests that the periodic lattice of regions comprising the Bragg-type periodic index media comprises an array of *holes*. Further, neither of these references discloses or suggests the operational specifications set forth by applicant in claims 20 and 21.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Other related Bragg resonant waveguide structures can be seen in the cited references to Keck et al, Fouckhardt et al, and Mizutani.

Any inquiry concerning the merits of this communication should be directed to Examiner John D. Lee at telephone number (571) 272-2351. The Examiner's normal work schedule is Tuesday through Friday, 6:30 AM to 5:00 PM. Any inquiry of a general or clerical nature (i.e. a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562, to the technical support staff supervisor (Team 8) at telephone number (571) 272-1564, or to the Technology Center 2800 Customer Service Office at telephone number (571) 272-1626.

  
**John D. Lee**  
**Primary Patent Examiner**  
**Group Art Unit 2874**